

CLAIMS

[1]

A multiaxial sensor unit for measuring one or more of multiaxial force, moment, acceleration, and angular acceleration, externally applied, *characterized by* comprising:

eight strain gauges disposed on a single plane, and one bridge circuit constructed by connecting the strain gauges.

[2]

A multiaxial sensor unit for measuring one or more of multiaxial force, moment, acceleration, and angular acceleration, externally applied, *characterized by* comprising:

eight strain gauges disposed on a single plane, and two bridge circuits constructed by connecting the strain gauges.

[3]

The multiaxial sensor unit according to claim 1 or 2, *characterized in that*

the unit comprises a strain generation body comprising a force receiving portion provided at a center, a fixed portion provided on an outer circumference, and an annular diaphragm portion connecting the force

receiving portion and the fixed portion to each other,
and

the strain gauges are disposed at four positions on
outer and inner edges of the diaphragm on a line
perpendicular to a center line of the diaphragm; and at
four positions on the outer and inner edges of the
diaphragm on a line perpendicular to the line
perpendicular to the center line of the diaphragm.

[4]

The multiaxial sensor unit according to any of
claims 1 to 3, *characterized in that* each of the strain
gauges is a piezoresistive element or a strain gauge
formed by sputtering.

[5]

A multiaxial sensor *characterized by* comprising a
plurality of multiaxial sensor units according to any of
claims 1 to 4.

[6]

The multiaxial sensor according to claim 5,
characterized in that the multiaxial sensor units are
disposed around a center point of the multiaxial sensor
at regular angular intervals at the same distance from
the center point.

[7]

The multiaxial sensor according to claim 6,
characterized in that the angular interval is 90 degrees.

[8]

The multiaxial sensor according to claim 7,
characterized in that the multiaxial sensor units are
disposed in positive and negative directions on X- and Y-
axes with an origin being set at the center point.

[9]

The multiaxial sensor according to claim 6,
characterized in that the angular interval is 120 degrees.

[10]

The multiaxial sensor according to any of claims 5
to 9, *characterized in that* the strain gauges are
disposed on outer and inner edges of the diaphragm on a
line extending through a center point of the multiaxial
sensor and a center point of each multiaxial sensor unit;
and on the outer and inner edges of the diaphragm on a
line perpendicular to the former line at the center point
of the multiaxial sensor unit.

[11]

The multiaxial sensor according to any of claims 5
to 10, *characterized in that* the sensor comprises a first
member comprising the multiaxial sensor units each
comprising the strain gauges; and a second member

comprising strain generation bodies opposed to the multiaxial sensor units and comprising no strain gauges, and

opposed force receiving portions of strain generation bodies are connected to each other, and multiaxial forces and moments applied between the first and second members are measured.

[12]

The multiaxial sensor according to any of claims 5 to 10, *characterized in that* the sensor comprises the multiaxial sensor units and an operation body provided on the force receiving portion of each multiaxial sensor unit, and multiaxial accelerations and angular accelerations applied to the multiaxial sensor units are measured.